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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Jurgen Gaydoul

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EXAMINER

BECKER, JOHN E

ART UNIT

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4177

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,193	Applicant(s) GAYDOUL, JURGEN	
	Examiner JOHN BECKER	Art Unit 4177	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9 and 10 is/are rejected.
- 7) ☐ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/22/2006, 3/27/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the preliminary amendment filed on October 17, 2007.

Information Disclosure Statement

2. All references in the information disclosure statement were reviewed.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 states "adjacent nozzle heads in the row of nozzle heads are driven in counter-rotating sense." This is indefinite because the claim does not state the point of reference relative to which the "adjacent nozzles" are "driven in counter-rotating sense". If it is an absolute point of reference, this states that the nozzles are mutually driven counter-clockwise. If the point of reference is relative to one another, this states that the adjacent nozzles are driven in opposite rotational directions. This is unclear.

For purposes of examination, the Examiner interprets "driven in counter-rotating sense" to mean driven to rotate in opposite directions with respect to one another.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 5-7, and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaydoul (5,502,881) in view of Court (2,217,360).

Per **claim 1**, Gaydoul discloses an apparatus for descaling hot rolled stock being moved with respect to the apparatus by spraying it with high pressure water (abstract) comprising:

at least one row of nozzle heads sweeping across the width of the rolled stock with a plurality of nozzle heads (Fig 3),

each nozzle head being motor-driven (col 4, lines 4-9) in rotation about an axis of rotation (A) substantially perpendicular to the surface of the rolled stock (col 2, lines 4-6), and

comprising at least two nozzles which are disposed eccentrically with respect to the axis of rotation (A) (col 2, line 6-7; Fig 4, Fig 7, Fig 8, Fig 10, Fig 11),

the nozzles of each nozzle head being arranged as closely as structurally possible to the circumference of the nozzle head (Fig 9, Abstract),

whereby a spray pattern is created on the surface of the rolled stock in a way to touch or overlap the spray pattern of the adjacent nozzle head in the row of nozzle heads (col 4, line 46-53; "uninterrupted descaling across the full width of the roll stock

... is guaranteed” states that the spray patterns of adjacent nozzles must touch or overlap),

and the nozzles being arranged in the nozzle head radially inclined outwardly at an angle of inclination (alpha) in the range of 0° to 20° (col 5, lines 4 and 5, the angle of inclination given is 15 degrees which falls within the claimed range);

Gaydoul does not disclose nozzles inclined in circumferential direction of the rotation of the nozzle head.

However, Court, a reference in the analogous art of removal of solids from the surfaces of vessels, discloses nozzles (45) on a rotational head inclined in the circumferential direction of the rotation of the device, (Court Fig 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify radially-inclined nozzles taught by Gaydoul by inclining said nozzles in the circumferential direction of rotation of the nozzle head utilizing a circumferential inclination such as the inclination taught by Court, because such inclination would direct the removed scale away from the upper surface of the rolled stock of Gaydoul.

Note to Applicant: to further clarify the use of the modified Gaydoul reference, the test for obviousness is not whether the features of a secondary reference (in this case Court) may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Per **claim 2**, the modified apparatus of Gaydoul discloses that the angle (alpha) of radial inclination is in the range of 0 degrees to 30 degrees, (Gaydoul col 3, lines 65-67).

The modified Gaydoul apparatus does not disclose the range to be 12° plus/minus 2° .

However, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the angle of radial inclination of 12° plus/minus 2° with reasonable expectation of success because applicant does not disclose the criticality of this angle and because this range is within the range of angles that the modified Gaydoul apparatus disclosed.

Per **claim 3 and claim 9**, the modified Gaydoul apparatus discloses nozzles inclined in the circumferential direction (Court Fig 1), but does not expressly disclose the angle of inclination in the circumferential direction in an angular range of 0° to 30° or in an angular range of $15^{\circ} \pm 2^{\circ}$.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to use an angle of inclination in the range of 0 degrees to 30 degrees or $15^{\circ} \pm 2^{\circ}$ because Applicant has not disclosed that an angle of inclination in the range of 0 degrees to 30 degrees or $15^{\circ} \pm 2^{\circ}$ provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the nozzle of undisclosed circumferential inclination because a broad

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range of circumferential inclinations would still direct the removed scale away from the upper surface of the rolled stock of the modified Gaydoul apparatus.

Per **claim 5**, the modified Gaydoul apparatus discloses that the jet opening angle of the jet exiting from the nozzles is no greater than 15° (Gaydoul "0 degrees to 15 degrees", Fig 5).

Per **claim 6 and claim 7**, the modified Gaydoul apparatus discloses four nozzles are arranged evenly distributed around the circumference of each nozzle head (Gaydoul col 2, lines 8-13), but does not expressly disclose at least six nozzles or eight nozzles are arranged evenly distributed around the circumference of each nozzle head.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to use at least six nozzles or eight nozzles because Applicant has not disclosed at least six nozzles or eight nozzles provide an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with four nozzles because the four nozzles already achieve sufficient "uniformity [of] surface treatment", (Gaydoul col 2, lines 12-13).

Per **claim 10**, the modified Gaydoul apparatus discloses that the jet opening angle of the jet exiting from the nozzles is between 0 degrees and 15 degrees (Gaydoul Fig 5, col 4, lines 25-27).

The modified Gaydoul apparatus does not disclose the range to be less than 10 degrees.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the jet opening angle of less than 10 degrees with reasonable expectation of success because applicant does not disclose the criticality of this angle range and because this range is within the range of jet opening angles that Gaydoul disclosed.

7. Claims 1-3, 5-7, and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaydoul (5,502,881) in view of Court (2,217,360) and admitted prior art of Gaydoul (5,502,881). [This is an alternative rejection should the applicant claim that the spray patterns of Gaydoul do not always touch or overlap.]

Per **claim 1**, please see the above for the disclosure of Gaydoul and Court.

The modified Gaydoul apparatus does not explicitly state that the spray pattern of the adjacent nozzle heads touch or overlap every time.

However, prior art disclosed by Gaydoul shows the practice of overlapping spray patterns during descaling, (Gaydoul Fig 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to make the spray patterns of adjacent nozzle heads overlap in view of the teachings of the prior art disclosed by Gaydoul, because said overlap would guarantee that the entire width of the rolled stock would be descaled.

Per **claims 2-3, 5-7, and 9-10**, please see rejections above.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gaydoul (5,502,881) in view of Court (2,217,360), as applied to claim 1 above, and further in view of Hiroshi et al. (JP 11-216513).

The modified apparatus of Gaydoul discloses that the rotating nozzle heads rotate in the same direction with overlapping spray patterns; the modified apparatus of Gaydoul does not disclose that said nozzle heads rotate in opposite directions.

However, Hiroshi et al. disclose a descaling apparatus where the nozzle heads rotate in opposite directions, (Abstract, Fig 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to rotate the adjacent nozzle heads of the modified apparatus of Gaydoul in opposite directions in the directions taught by Hiroshi, because “the interference of high-pressure water between the adjacent rotating heads is prevented,” (Abstract).

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gaydoul (5,502,881) in view of Court (2,217,360) and admitted prior art of Gaydoul (5,502,881), as applied to claim 1 above, and further in view of Hiroshi et al. (JP 11-216513).

The modified apparatus of Gaydoul discloses that the rotating nozzle heads rotate in the same direction with overlapping spray patterns; the modified apparatus of Gaydoul does not disclose that said nozzle heads rotate in opposite directions.

However, Hiroshi et al. disclose a descaling apparatus where the nozzle heads rotate in opposite directions, (Abstract, Fig 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to rotate the adjacent nozzle heads of the modified apparatus of Gaydoul in opposite directions in the directions taught by Hiroshi, because "the interference of high-pressure water between the adjacent rotating heads is prevented," (Abstract).

Allowable Subject Matter

10. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach by itself or in combination "characterized in that pairs or groups of nozzle heads in the row of nozzle heads are adapted to be switched off or on in correspondence with different widths of rolled stock," with the limitations of the claim on which claim 8 depends.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rosenthal et al. (5,996,200) disclose a descaling method where the flow to nozzles for descaling is turned on and off in order to increase the pressure of the water delivered to the nozzles.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN BECKER whose telephone number is (571)270-7536. The examiner can normally be reached on Monday-Friday 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sam Yao can be reached on 571-272-1224. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. B./

Examiner, Art Unit 4177

/Michael C. Astorino/

Primary Examiner, Art Unit 3769

December 29, 2008